

Fig. 1. Plots the operating income of firms [measured as earnings before interest, taxes, depreciation, and amortization (EBITDA) divided by total assets] that filed for Chapter 11 between 1991 and 1998 and successfully reorganized. Quarter 0 is the quarter end before the Chapter 11 filing date and quarter 1 is the quarter end after the Chapter 11 filing date. After quarter 0, the number of firms for which operating income is calculated declines as firms exit Chapter 11 from 81 firms at quarter 0 to 41 firms by quarter 8.

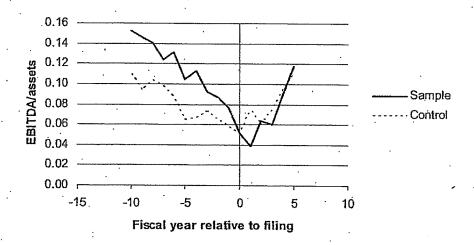


Fig. 2. Plots the annual operating performance of sample firms that reorganize against a control sample of firms formed using the Barber and Lyon (1996) performance- and industry-matching methodology. Year 0 is the fiscal year-end before sample firms filed for Chapter 11. Operating performance is measured as earnings before interest, taxes, depreciation, and amortization (EBITDA) divided by total assets at each fiscal year-end. The control sample for a given sample firm is determined by two-digit standard industry classification code and operating performance of between 90% and 110% of the sample firm at year 0; the control operating performance is the median of all matches for a given sample firm.

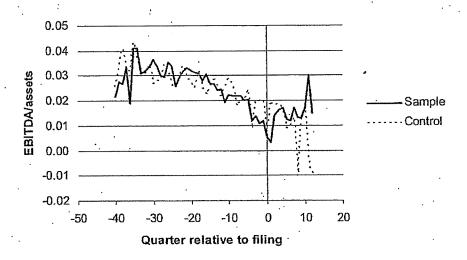


Fig. 3. Plots the quarterly operating performance of sample firms that reorganize against a control sample of firms formed using the Barber and Lyon (1996) performance- and industry-matching methodology. Quarter 0 is the fiscal quarter end before sample firms filed for Chapter 11. Operating performance is measured as earnings before interest, taxes, deprecation, and amortization (EBITDA) divided by total assets at each fiscal quarter end. The control sample for a given sample firm is determined by two-digit SIC code and operating performance of between 90% and 110% of the sample firm at quarter 0; the control operating performance is the median of all matches for a given sample firm.

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Sample firms filed for Chapter 11 between 1991 and 1998. Panel A details the type of filing, Panel B provides the distribution of the filing dates, and Panel C describes the outcome of the process. For the 262 sample firms for which we have exact confirmation dates, Panel D report the number of years spent in Chapter 11 from filing to confirmation of the plan. Panel E shows the mean and median number of months these 262 firms spent in Chapter 11, classified by Chapter 11 outcome. All financial data in Panel F are obtained from Compustat. Year 0 is the fiscal year-end preceding the Chapter 11 filing. Number of firms is the number of firms for which data are available in a particular year. In panel F, mean and median sales and total debt to total assets are adjusted by the respective industry level (same four-digit Standard Industry Classification code if there are at least five firms at that level). z-statistic sign is the z-statistic for the sign test for equality of the firm characteristic and the median industry characteristic.

Panel A. Types of Chapter 11 filing

| Chapter 11 type | Number of firms | Percent |
|-----------------------------------------------|-----------------|---------|
| Voluntary traditional Chapter 11 | 371 · . | 81 |
| Prepackaged Chapter 11 | 65 | 14 |
| Involuntary Chapter 11 | 18 | . 4 |
| Involuntary Chapter 7 converted to Chapter 11 | 5 | 1 |
| Total | 459 | . 100 |

Panel B. Distribution of filing dates

| Year . | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | Total |
|------------------------|------|------|------|------|------|------|------|------|-------|
| Number of firms filing | ·87 | 74 | 68 | 25 | 55 | 50 | 46 | 54 | 459 |

Panel C. Outcome of Chapter 11

| Outcome | Number of firms | Percent | • |
|---------------------|-----------------|---------|---|
| Reorganized | 201 | .44 | |
| Liquidated | . 90 | 20 | |
| Acquired/Merged | 70 | 15 | |
| Still in Chapter 11 | 3 | 1 | |
| Undetermined | 95 · | 20 | |
| Total | 459 | 100 | |

Panel D. Distribution of years spent in Chapter 11

| | | | | | | | | | ***** |
|---------------------|-----|-----|------|-----|-----|----|-------|-----|-------|
| Years in Chapter 11 | <1 | 1-2 | 2-3 | 3-4 | 4–5 | 56 | · 6–7 | 7∸8 | Total |
| Number of firms | 134 | 96 | . 21 | 6 | 2 . | 1 | 1 | 1 | 262 |

Panel E. Number of months spent in Chapter 11

| • | Number of firms | Меап | Median |
|--------------------|-----------------|-------|--------|
| All firms | 262 | 14.70 | 12.90 |
| Reorganized | 187 | 14.32 | 11.63 |
| Liquidated | 39 | 16.98 | 16.43 |
| Acquired or merged | 32 | 13.64 | 13.28 |
| Undetermined | . 4 | 18.38 | 19.53 |

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Panel F. Firm size and leverage relative to industry for 11 years before filing for Chapter 11

| z-statistic Number adjusted adjusted adjusted adjusted adjusted 4.00*** 3.21*** 189 0.04 0.02 2.61*** 4.19*** 3.16*** 212 0.05 0.04 3.22** 4.19*** 3.16*** 212 0.05 0.04 3.22** 4.19*** 3.31*** 227 0.05 0.03 3.29*** 4.60*** 3.35*** 252 0.08 0.05 5.38*** 4.63*** 2.56*** 283 0.10 0.05 5.98*** 4.63*** 2.84*** 314 0.13 0.08 4.44*** 4.76*** 2.65*** 355 0.12 0.09 8.12*** 4.18*** 2.21*** 398 0.16 0.13 10.91*** 3.73*** 1.02 420 0.19 0.14 8.62*** 2.82*** 0.43 330 0.42 0.28 10.78*** | | | Sales | | | | :Tot | Total debt/total assets | ssets | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------|-----------------------|-------------|-------------|----------|-----------|-------------------------|-------------|-------------|
| z-statistic Number adjusted adjusted nean nedian retain retain t-statistic 4.00*** 3.21*** 189 0.04 0.02 2.61*** 4.19*** 3.16*** 212 0.05 0.04 3.25*** 4.17*** 3.31*** 227 0.05 0.03 3.29*** 4.60*** 3.35*** 252 0.08 0.05 5.38*** 4.63*** 2.56*** 283 0.10 0.05 5.98*** 4.42*** 2.84*** 314 0.13 0.08 4.44*** 4.76*** 2.65*** 355 0.12 0.09 8.12*** 4.18*** 2.21** 398 0.16 0.13 10.91*** 3.73*** 1.02 420 0.19 0.14 8.62*** 2.82*** 0.43 330 0.42 0.28 10.78*** | industry- adjusted | | Industry- adjusted | | | | Industry- | Industry- | | |
| t-statistic sign of firms mean median t-statistic 4.00*** 3.21*** 189 0.04 0.02 2.61*** 4.19*** 3.16*** 212 0.05 0.04 3.22*** 4.17*** 3.31*** 227 0.05 0.03 3.29*** 4.60*** 3.35*** 252 0.08 0.05 5.38*** 4.63*** 2.56*** 283 0.10 0.05 5.98*** 4.76*** 2.84*** 314 0.13 0.08 4.44*** 4.76*** 2.65*** 355 0.12 0.09 8.12*** 4.18*** 2.21*** 398 0.16 0.13 10.91*** 3.73*** 1.02 420 0.19 0.14 8.62*** 2.82*** 0.43 330 0.42 0.28 10.78*** | | | median | | z-statistic | Number | adjusted | adjusted | | z-statistic |
| 3.21*** 189 0.04 0.02 2.61**** 3.16*** 212 0.05 0.04 3.22*** 3.31*** 227 0.05 0.03 3.29*** 3.35*** 252 0.08 0.05 5.38*** 2.56*** 283 0.10 0.05 5.98*** 2.84*** 314 0.13 0.08 4.44*** 2.65*** 355 0.12 0.09 8.12*** 2.21** 398 0.16 0.13 10.91*** 1.02 420 0.19 0.14 8.62*** 0.43 429 0.22 0.18 13.57*** 0.93 330 0.42 0.28 10.78*** | of firms (millions of \$) (mill | | millions of \$) | 1-statistic | sign | of firms | mean | median | t-statistic | sign |
| 3.16*** 212 : 0.05 0.04 3.22*** 3.31*** 227 0.05 0.03 3.29*** 3.35*** 252 0.08 0.05 5.38*** 2.56*** 283 0.10 0.05 5.98*** 2.84*** 314 0.13 0.08 4.44*** 2.65*** 355 0.12 0.09 8.12*** 2.21*** 398 0.16 0.13 10.91*** 1.02 420 0.19 0.14 8.62*** 0.43 429 0.22 0.18 13.57*** 0.93 330 0.42 0.28 10.78*** | 229.62 22. | 22. | 22.58 | | 3.21*** | 189 | 0.04 | 0.02 | 2.61*** | 0.73 |
| 3.31*** 227 0.05 0.03 3.29*** 3.35*** 252 0.08 0.05 5.38*** 2.56** 283 0.10 0.05 5.98*** 2.84*** 314 0.13 0.08 4.44*** 2.65** 355 0.12 0.09 8.12*** 2.21** 398 0.16 0.13 10.91*** 1.02 420 0.19 0.14 8.62*** 0.43 429 0.22 0.18 13.57*** 0.93 330 0.42 0.28 10.78*** | 230.43 . 15.10 | 15.1 | | | 3.16 | 212 | 0.05 | 0.04 | 3.22*** | 3.23**. |
| 3.35*** 252. 0.08 0.05 5.38*** 2.56*** 283 0.10 0.05 5.98*** 2.84*** 314 0.13 0.08 4.44*** 2.65*** 355 0.12 0.09 8.12*** 2.21** 398 0.16 0.13 10.91*** 1.02 420 0.19 0.14 8.62*** 0.43 429 0.22 0.18 13.57*** 0.93 330 0.42 0.28 10.78*** | 229.85 14.73 | 14.7 | | | 3.31*** | 227 | 0.05 | 0.03 | 3.29*** | 1.46 |
| 2.56*** 283 0.10 0.05 5.98*** 2.84*** 314 0.13 0.08 4.44*** 2.65*** 355 0.12 0.09 8.12*** 2.21*** 398 0.16 0.13 10.91*** 1.02 420 0.19 0.14 8.62*** 0.43 429 0.22 0.18 13.57*** -0.93 330 0.42 0.28 10.78*** | 241.04 21.51 | 21.51 | | 4.60*** | 3.35*** | 252. | 0.08 | 0.05 | 5.38*** | 3.53*** |
| 2.84*** 314 0.13 0.08 4.44*** 2.65** 355 0.12 0.09 8.12*** 2.21** 398 0.16 0.13 10.91*** 1.02 420 0.19 0.14 8.62*** 0.43 429 0.22 0.18 13.57*** -0.93 330 0.42 0.28 10.78*** | 18.66 | 18.66 | | 4.63*** | 2.56** | 283 | 0.10 | 0.05 | 5.98*** | 3.51 |
| 2.65** 355 0.12 0.09 8.12*** 2.21** 398 0.16 0.13 10.91*** 1.02 420 0.19 0.14 8.62*** 0.43 429 0.22 0.18 13.57*** -0.93 330 0.42 0.28 10.78*** | 192.06 16.39 | 16.39 | | 4.42 | 2.84*** | 314 | 0.13 | 0.08 | 4.44 | 4.63*** |
| 2.21** 398 0.16 0.13 10.91*** 1.02 420 0.19 0.14 8.62*** 0.43 429 0.22 0.18 13.57*** -0.93 330 0.42 0.28 10.78*** | 179.91 15.90 | 15.90 | | 4.76*** | 2.65 | 355 | 0.12 | 60'0 | 8.12*** | 5.37*** |
| 1.02 420 0.19 0.14 8.62*** 0.43 429 0.22 0.18 13.57*** -0.93 330 0.42 0.28 10.78*** | 139.89 10.89 | 10.89 | | 4.18*** | 2,21** | 398 | 0.16 | 0.13 | 10.01 | 8.12*** |
| 0.43 429 0.22 0.18 13.57*** -0.93 330 0.42 0.28 10.78*** | 133.08 4.73 | 4.73 | • | 3.73*** | 1.02 | 420 | 0.19 | | 8.62 | 8.10*** |
| -0.93 330 0.42 0.28 10.78*** | 101.54 2.91 | 2.91 | - | 2.82 | 0.43 | 429 | 0.22 | | 13.57*** | 10.88 |
| | .92.40 -4.39 | -4.39 | | 2.21 | -0.93 | 330 | 0.42 | | 10.78 | 12.66 |

Significant at 1%. Significant at 5%.

Table 2 Industry-adjusted and normalized cash flows for sample firms during pre-filing period

available in a particular year. Median is the median industry-adjusted and normalized E/A for the sample firms. Industry median is the median E/A [(E/A)firm - E/A)jndustry]/o[(E/A) industry]. Year 0 is the fiscal year-end preceding the Chapter 11 filing. # is the number of firms for which data are median, z-statistic sign-rank is the z-statistic for the sign-rank test. Panel A contains information for the entire sample and Panels B through E in the same four-digit Standard Industry Classification code industry segment as the sample firms if there are at least five firms at that level. If Sample firms filed for Chapter 11 between 1991 and 1998. All financial data are obtained from Compustat. E/A is the earnings before interest there are not enough firms at the four-digit level, three-digit and two-digit Standard Industry Classification codes are used to obtain industry taxes, depreciation, and amortization divided by assets. Industry-adjusted and normalized cash flows are calculated as contain information for subsamples, categorized by the outcome of the Chapter 11 process.

 $[(E/A)_{firm}$ - $E/A)_{industry}$ $J/\sigma[(E/A)_{industry}]$

| | | . A MII | | | R Represe | ization | | C. Liquidation | ion | | D. Acquisition | tion | | E. Undete | Undetermined |
|----------------------------|-----|-----------------------------------------|-------------|-------|-----------|---------------|------------|----------------|---------------|------|----------------|---------------|-------------|-----------|---------------|
| | | 74. 4414 | | | | -2 | | | -2 | | | -2 | | | 7 |
| • . | | | | | : | statistic | •. | | statistic | | | statistic | | | statistic |
| 7 | .# | Median | z-statistic | ## | Median | sign- rank | # | Median | sign- rank | # | Median | sign- rank | ∓ #: | Median | sign- rank |
| 1 Cal | = | Macadan | | | | | | | | | | | | | |
| . 10 | 186 | 0.095 | 0.93 | 91 | 0.124 | 1.04 | 35 | 0.300 | 2,03 | 29 | 0.195 | 0.76 | 28 | -0.349 | -2.44 |
| g o | 212 | 0.079 | 0.19 | 106 | 0.106 | 0.49 | 38 | 0.179 | 1.07 | 35 | 0.067 | 0.38 | 30 | -0.205 | -2.25 |
| | 226 | 0.014 | 0.10 | 120 | 0.068 | 1.35 | 4 | -0.055 | -1.72 | 36 | 0.016 | 0.36 | 33 | -0.084 | -1.[] |
| ָר בּי | 050 | -0.031 | -1 69 | 122 | -0.001 | -0.58 | 49 | -0.111 | -1:94 | 39 | 0.033 | 0.00 | 37 | -0.060 | 1.11 |
| , 4 | 280 | -0.016 | 8 | 131 | 0.029 | -0.74 | 26 | -0.061 | -1.91 | 46 | 0.039 | -0.21 | 46 | -0.025 | -1.04 |
| ץ יך | 307 | 0.029 | -2.78 | 142 | -0.054 | -2.06 | 58 | -0.063 | -2.18 | 49 | -0.004 | -0.37 | <u>\$</u> 2 | -0.020 | -0.69 |
| . 4 | 355 | -0.075 | -5 36 | 167 | -0.075 | -2.90 | <i>L</i> 9 | -0.067 | -2.96 | 54 | -0.056 | -1.74 | . 64 | -0.207 | -3.53 |
| ۲.۲ | 305 | -0.144 | 7.14*** | , 081 | -0.130 | -3.85 | 71 | -0.250 | -3.34 | 62 | -0.110 | -3.25 | 79 | -0.160 | 4.= |
| , , | 814 | -0.205 | -8.87 | 183 | -0.133 | -4.97 | 79 | -0.259 | -4.46 | . 63 | -0.159 | -3.60 | 98 | -0.308 | -4.63 |
| · • - • : | 427 | -0.353 | -12.38 | 185 | -0.258 | -7.44 | 83 | -0.400 | -5.62 | 89 | -0.360 | -5.60 | 88 | -0.439 | -5.84 |
| ۰. د | 329 | -0.607 | -13.69 | 157 | -0.486 | -9.46 | 70 | -0.871 | -6.27 | 52 | -0.611 | -5.77 | 47 | -0.471 | -4.94 |
| , | | *************************************** | | | | | | | | | | | | | |

Significant at 1%. Significant at 5%.

Sample firms filed for Chapter 11 between 1991 and 1998. All financial data are obtained from Compustat. Year 0 is the fiscal year-end preceding the Chapter 11 filing and post is the fiscal year-end following the reorganization. Years in Chapter 11 is the number of fiscal years between year 0 and post. Number of firms is the number of firms for which data are available in a particular year. Sample sizes differ in panels A and B as a result of differences in the matching procedure. z-statistic sign-rank is the z-statistic for the sign-rank test for the median change over the bankruptcy.

In panel A, E/A is the earnings before interest, taxes, depreciation, and amortization divided by assets. Median is median industry-adjusted and normalized E/A. E/A_{industry} is the median firm in the same four-digit Standard Industry Classification (SIC) code industry segment as the sample firms if there are at least five firms at that level. If there are not enough firms at the four-digit level, three-digit and two-digit SIC codes are used to obtain industry median. Median change is the change in median industry-adjusted and normalized E/A from 0 to post.

In Panel B, median excess performance is the median change in industry-and-performance-adjusted E/A from time 0 to the stated year, following Barber and Lyon (1996). Control firms are matched on two-digit SIC and EBITDA/assets between 90% and 110% of sample firms at time 0. Median change is the median change in excess earnings from year 0 to year post. Panel C extends the Barber and Lyon methodology from Panel B for quarterly data and for matches at time 1 instead of at time 0.

Panel A. Changes in $[(E/A)_{firm} - (E/A)_{industry}]/\sigma[(E/A)_{industry}]$

| Years in | | Number of | | Median | z-statistic |
|-------------|--------------|---------------|---------------|--------|-------------|
| Chapter 11 | • | firms | Median | change | sign-rank |
| Sample cate | gorized by n | umber of year | rs in Chapter | 11 | |
| | | | | | • |
| 1 | 0 | 34 | -0.417 | | |
| | Post | 34 | -0.112 | | |
| | 0 to post | 34 | | 0.370 | 3.26*** |
| • | ••••• | • | | | |
| . 2 | . 0 | . 44 | -0.407 | | |
| •• | 1 | 44 | -0.566 | | • |
| · | Post | 44 | -0.105 | | • |
| | 0 to post | 44 | | 0.218 | 2.10** |
| | | | | | |
| 3 | .0 | 23 | -0.190 | | |
| | . 1 | · 23 | -0.857 | • | |
| | . 2 | 23 | -0.246 | | |
| | Post | 23 | -0:185 | | |
| | 0 to post | 23 | | 0.158 | 2.73*** |
| Full sample | | | | | |
| All firms | 0 | 113 | -0.350 | | المستدارين |
| | Post | 113 | -0.133 | | |
| | 0 to Post | 113 | 3.200 | 0.299 | 4.87*** |

Panel B. Changes in (E/A)_{firm} - (E/A)_{industry & performance}

| | | | Median | | | |
|-------------|--------------|---------------|-----------------|----------|-------------|-----|
| Years in | | Number of | excess | Median | z-statistic | |
| Chapter 11 | Year | firms | performance | change | sign-rank | • |
| Sample cate | gorized by r | number of yea | rs in Chapter 1 | 1 | | |
| _ | | | | | · · | • |
| 1 . | 0 | 35 | 0.000 | | | . • |
| • | Post | 35 | 0.024 | | • | |
| • | 0 to post | • | • | 0.024 | 1.66 | |
| , | - | | | | | |
| 2 | . 0 | 44 | 0.000 | | | |
| | 1 | 44 | -0.018 | | | |
| | Post | 44 | 0.027 | | | |
| , | 0 to post | | | 0.028 | 1.52 | |
| | • | | | | | |
| 3 | 0 | 23 | 0.000 | | | |
| | 1 | 23 | -0.066 | | | |
| | 2 | 23 | -0.033 | | | |
| | Post | 23 | 0.006 | | | |
| | 0 to post | . 23 | | 0.007 | 0.45 | |
| Full sample | - | • | | • | | |
| | | | | | | |
| All Firms | 0 | 113 | 0.000 | | | |
| | Post | 113 | 0.018 | <i>:</i> | • | |
| | 0 to post | 113 | • | 0.018 | 2.19** | |
| | | | | | | |

Panel C. Changes in (E/A)_{firm} – (E/A)_{industry & performance}

| Data | Sample match | * | Number | Median | z-statistic | |
|-----------|--------------|-----------|----------|---------------------|-------------|--|
| frequency | date | Period | of firms | change ^a | sign-rank | |
| Quarterly | Quarter 0 | 0 to Post | 81 | 0.005 | 2.21** | |
| Quarterly | Quarter 1 | 1 to Post | 74 | 0.011 | 2.88*** | |
| Annual | Year 1 | 1 to Post | 79 | 0.037 | 3.91*** | |

^a Median change for quarterly data reflects the change in one quarter's earnings; median change for annual data reflects changes in a year's earnings.

Significant at 1%.

Significant at 5%.

Table 4 Changes in operating characteristics.

Sample firms filed for Chapter 11 between 1991 and 1998. Variables in the table are measured from the fiscal year-end prior to filing to the fiscal year-end following emergence from Chapter 11. Variables are collected from Compustat supplemented by firms' 10-k filings. Number of firms is the number of firms for which the data item is available, mean change is the average change from pre-filing to post-emergence for sample firms, median change is the median change for sample firms during the same period, t-statistic is the t-statistic for the hypothesis that the mean change is zero, and z-statistic is the z-statistic for the sign-rank test that the median change is zero. EBITDA is earnings before interest, taxes, depreciation, and amortization, COGS is cost of goods sold, SG&A is selling, general, and administrative expenses. Gross margin is sales minus cost of goods sold. Assets, sales, and the number of employees are measured as the percentage change from pre- to post-filing fiscal year-ends. Business segments is the number of reported business segments.

| Variable | Number of firms | Mean change | Median change | t-statistic | z-statistic sign-rank |
|---------------------------|-----------------|----------------|------------------|------------------|--------------------------|
| Panel A. Changes in comp | nananta of an | eratina incoma | to total accets | | |
| EBITDA/total assets | 113 | 0.066 | 0.025 | 2.40*** | 3.93*** |
| Sales/total assets | 113 | 0.083 | 0.054 | 1.04 | 0.74 |
| COGS/total assets | 113 | 0.042 | 0.019 | 0.63 | 0.25 |
| Gross margin/total assets | 113 | 0.042 | 0.044 | 1.74 | 2.79*** |
| SG&A/total assets | 102 | -0.033 | 0.003 | -0.92 | 0.28 |
| Labor cost/total assets | 7 | -0.098 | -0.111 | -2.49*** | -2.10** |
| Panel B. Changes in size | | | | • | |
| Assets | 113 | -20.9% | -26.0% | -5.23 *** | -5.82*** |
| Sales | 112 | -13.8% | -19.8% | -1.64 | -6.49*** |
| Employees | 107 | -22.8% | -24.7% | -5.17 *** | -6.94*** |
| Business segments | 106 | -0.028 | . 0 | -0.90 | -0.84 |

Significant at 1%. Significant at 5%.

Table 5 Factors affecting changes in excess operating income.

Sample firms filed for Chapter 11 between 1991 and 1998. The dependent variable is the change in the Barber and Lyon adjusted EBITDA/assets from time 0 to post-reorganization (Table 3, panel B). Table entries are estimated coefficients (t-statistic). The number of classes (excluding administrative, tax, and priority classes) is taken from the last plan of reorganization. DIP is a dummy variable set to one if a firm received debtor-in-possession financing, management change is a dummy set to one if the chairman of the board, chief executive officer, or president turned over between the fiscal year-end prior to filing and the fiscal year-end following resolution, total liabilities to total assets is calculated at the fiscal year-end prior to filing, prepack is 1 if a firm filed for Chapter 11 and filed a plan of reorganization simultaneously, market to book is market value of equity prior to filing plus total assets minus book value of equity minus deferred taxes all divided by book value of assets (all data are from the fiscal year-end pre-filing), z-score is Altman's z-score as of the fiscal year-end pre-filing, industry distress is one if median industry operating earnings declines over a period from one year prior to two years following the bankruptcy filing.

| Variable | Model 1 | Model 2 |
|--------------------------------|-----------|------------|
| Intercept | 0.068 | 0.076 |
| | (0.54) | (1.02) |
| Number of classes | -0.013 | -0.013 |
| • | (-2.48)** | (-2.83)*** |
| DIP | -0.024 | -0.035 |
| | (-0.53) | (-0.98) |
| Management change | -0.023 | -0.023 |
| , | (-0.45) | (-0.60) |
| Total liabilities/total assets | 0.126 | 0.121 |
| | (1.90)* | (5.12)*** |
| Prepack | -0.081 | -0.070 |
| A | (-1.60) | (-1.73) |
| Market to book | 0.005 | |
| | (0.37) | |
| z-score | 0.000 | |
| • | (0.00) | |
| Industry distress | -0.014 | -0.018 |
| | (-0.27) | (-0.45) |
| Number of observations | 68 | 86 |
| R-squared | 0.264 | 0.294 |
| F-statistic | 2.65 | .5.49*** |

Significant at 1%.

Significant at 5%.

Significant at 10%

EXHIBIT I

Temîn, Esq., Michael L.

| ···· | | | |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • | Page 1 | | Page 2 |
| | | 1 | |
| | IN THE UNITED STATES DISTRICT COURT | 2 | APPEARANCES: |
| · | FOR THE DISTRICT OF DELAWARE | 3 | Counsel for Plaintiffs |
| | | | DAMNY C BACCLES CONTRA |
| | ARLIN M. ADAMS, Chapter : | 4 | BARRY E. BRESSLER, ESQUIRE Schnader, Harrison, Segal & Lewis |
| | 11 Trustee of the : Post-Confirmation : | 5 | 1600 Market Street, Suite 3600 |
| | Bankruptcy Estates of : | | Philadelphia, Pennsylvania 19103 |
| | CORAM HEALTHCARE : | 6 | (215) 751-2572 |
| | CORPORATION, a Delaware : | ľ· | bbressler@schnader.com |
| | Corporation, and of : CORAM INC., a Delaware : | 7 | |
| 1 | Corporation | 8 | Counsel for Defendants |
| | : | 9 | ELLIOT PETERS, ESQUIRE |
| | V5. : | _ | Keker & Van Nest, LLP |
| | DANIEL D. CROWLEY, DONALD : CASE NO. | 10 | 710 Sansome Street |
| | J. AMARAL; WILLIAM J. CASEY; : 04-1565 | 11 | San Francisco, California 94111 |
| | L. PETER SMITH; and SANDRA : | 12 | (415) 391-5400 |
| | L. SMOLEY, : Defendants. : | 13 | epeters@kvn.com |
| | | 14 | |
| | Philadelphia, Pennsylvania, | 15 . | ALSO PRESENT: Gerard Alfe, Videographer |
| | Monday, August 6, 2007 | 16 | |
| ١. | | 17 | |
| , | Video deposition of MICHAEL L. TEMIN, | 18 | |
| | ESQUIRE, taken pursuant to notice, at | 19 | |
| | Schnader, Harrison, Segal & Lewis, 1600 Market Street, Suite 3600, on the above | 20 | |
| | date, beginning at approximately 10:10 a.m., | 21 | |
| | before Michelle L. Gray, Certified Shorthand | 22 | |
| | Reporter and Notary Public. | 24 | · |
| · . | | 25 | (INDEX at end of transcript.) |
| | Page 3 | | Page 4 |
| 1 | | 1 | MICHAEL L. TEMIN, ESQUIRE |
| 2 | THE VIDEOGRAPHER: This | 2 | Lewis. |
| 3 | videotape deposition is now beginning. | . 3 | MICHAEL L. TEMIN, ESQUIRE, |
| 4 | This is the videotape deposition of | 4 | having been first duly sworn, was examined |
| 5 | Michael C Temin, Tape 1, Volume 1, taken | 5 | and testified as follows: |
| 6 | in the matter of Adams versus Crowley, et | 6 | EXAMINATION |
| 7 | al., in the United States District Court | 7 | BY MR. PETERS: |
| 8 | in the District of Delaware, Case No. | 8 | · |
| | 04-1565 (SLR). | " | Q. Mr. Temin, how are you employed? |
| 10 | | 3 | A. I'm employed by wolf, Block, |
| ł | Today's date is August 6, 2007. | 10 | Solis-Cohen, LLP. |
| 11 . | • | | |
| 1 | The time is 10:10. The court reporter is | 11 | Q. What are they? |
| 12 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, | 12 | A. A law firm. |
| 13 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote | 1 | • |
| 1 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote Worldwide Service. | 12 | A. A law firm. |
| 13 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote | 12 13 | A. A law firm. Q. Are you testifying as an expert in |
| 13 14 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote Worldwide Service. | 12 13 14 | A. A law firm. Q. Are you testifying as an expert in this case? |
| 13 14 15 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote Worldwide Service. Counsel will now introduce | 12 13 14 15 | A. A law firm. Q. Are you testifying as an expert in this case? A. Yes. |
| 13 14 15 16 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote Worldwide Service. Counsel will now introduce themselves. | 12 13 14 15 16 | A. A law firm. Q. Are you testifying as an expert in this case? A. Yes. Q. Have you testified as an expert in |
| 13 14 15 16 17 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote Worldwide Service. Counsel will now introduce themselves. MR. PETERS: Elliott Peters of | 12 13 14 15 16 17 | A. A law firm. Q. Are you testifying as an expert in this case? A. Yes. Q. Have you testified as an expert in any other cases? A. Yes. |
| 13 14 15 16 17 18 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote Worldwide Service. Counsel will now introduce themselves. MR. PETERS: Elliott Peters of Keker and Van Ness, LLP, on behalf of the defendant, Daniel Crowley. | 12 13 14 15 16 17 18 | A. A law firm. Q. Are you testifying as an expert in this case? A. Yes. Q. Have you testified as an expert in any other cases? A. Yes. Q. On how many other occasions have you |
| 13 14 15 16 17 18 19 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote Worldwide Service. Counsel will now introduce themselves. MR. PETERS: Elliott Peters of Keker and Van Ness, LLP, on behalf of the defendant, Daniel Crowley. MR. BRESSLER: Barry Bressler | 12 13 14 15 16 17 18 19 | A. A law firm. Q. Are you testifying as an expert in this case? A. Yes. Q. Have you testified as an expert in any other cases? A. Yes. Q. On how many other occasions have you testified as an expert? |
| 13 14 15 16 17 18 19 20 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote Worldwide Service. Counsel will now introduce themselves. MR. PETERS: Elliott Peters of Keker and Van Ness, LLP, on behalf of the defendant, Daniel Crowley. MR. BRESSLER: Barry Bressler of Schnader, Harrison, Segal & Lewis on | 12 13 14 15 16 17 18 19 20 21 | A. A law firm. Q. Are you testifying as an expert in this case? A. Yes. Q. Have you testified as an expert in any other cases? A. Yes. Q. On how many other occasions have you testified as an expert? A. In court or at depositions? |
| 13 14 15 16 17 18 19 20 21 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote Worldwide Service. COUNSEL WILL NOW INTRODUCE themselves. MR. PETERS: Elliott Peters of Keker and Van Ness, LLP, on behalf of the defendant, Daniel Crowley. MR. BRESSLER: Barry Bressler of Schnader, Harrison, Segal & Lewis on behalf of the plaintiff, Arlin M. Adams, | 12 13 14 15 16 17 18 19 20 21 | A. A law firm. Q. Are you testifying as an expert in this case? A. Yes. Q. Have you testified as an expert in any other cases? A. Yes. Q. On how many other occasions have you testified as an expert? A. In court or at depositions? Q. Any sworn testimony. |
| 13 14 15 16 17 18 19 20 21 22 23 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote Worldwide Service. COUNSEL WILL NOW INTRODUCE THEMSELVES. MR. PETERS: Elliott Peters of Keker and Van Ness, LLP, on behalf of the defendant, Daniel Crowley. MR. BRESSLER: Barry Bressler of Schnader, Harrison, Segal & Lewis on behalf of the plaintiff, Arlin M. Adams, the Chapter 11 Trustee. | 12 13 14 15 16 17 18 19 20 21 22 23 | A. A law firm. Q. Are you testifying as an expert in this case? A. Yes. Q. Have you testified as an expert in any other cases? A. Yes. Q. On how many other occasions have you testified as an expert? A. In court or at depositions? Q. Any sworn testimony. A. What time period? |
| 13 14 15 16 17 18 19 20 21 | The time is 10:10. The court reporter is Michelle Gray. I am the video operator, Gerard Alfe, both representing LiveNote Worldwide Service. COUNSEL WILL NOW INTRODUCE themselves. MR. PETERS: Elliott Peters of Keker and Van Ness, LLP, on behalf of the defendant, Daniel Crowley. MR. BRESSLER: Barry Bressler of Schnader, Harrison, Segal & Lewis on behalf of the plaintiff, Arlin M. Adams, | 12 13 14 15 16 17 18 19 20 21 | A. A law firm. Q. Are you testifying as an expert in this case? A. Yes. Q. Have you testified as an expert in any other cases? A. Yes. Q. On how many other occasions have you testified as an expert? A. In court or at depositions? Q. Any sworn testimony. |

8/6/2007

Temin, Esq., Michael L.

| · · · · · · | | ····· | - |
|-------------|-----------------------------------------------|-------|-----------------------------------------------|
| | Page 169 | | Page 170 |
| 1 | MICHAEL L. TEMIN, ESQUIRE | 1 | MICHAEL L. TEMIN, ESQUIRE |
| 2 | Q. In the course of your work, did you | 2 | A. I don't remember the the first is |
| . 3 | review any of these valuations of Coram that | 3 | discounted cash flow. And there are two |
| 4 | are referenced here on this chart? | 4 | others, and I don't remember the description |
| 5 | A. Only to the extent that they show up | 5 | of either of them. |
| 6 | in testimony at the hearings. | . 6 | Q. In the course of your work in as |
| 7 | Q. Did you read, for example, the | 7 | a bankruptcy lawyer, have you become familiar |
| 8 | Chanin valuation from July 31st of 2000, the | 8 | with a discounted cash flow method of valuing |
| 9 | one who came up with 207 million? | 9 | companies? |
| 10 | A. No. | 10 | A. I have a general understanding of |
| 11 | Q. Have you read any reports of any | -11 | it. |
| 12 | valuations prepared by any of these experts? | 12 | Q. Is it a fair statement that that |
| 13 | MR. BRESSLER: Object to the | 13 | method is typically among those used by |
| 14 | form. Asked and answered. But you can | 14 | valuation experts in valuing ongoing |
| 15 | answer again. | 15 | businesses? |
| 16 . | THE WITNESS: No. | 16 | A. Yes. |
| 17 | BY MR. PETERS: | 1.7 | Q. Is it also a fair statement that in |
| 18 | Q. Do you understand the methodology | 18 | bankruptcy, it's common to confront the need |
| 19 | qenerally by which these companies or these | 19 | to value a business? |
| :20 | advisors set out to value Coram? | 20 | A. I'm having trouble with your word, |
| 21 | A. Yes. | 21 | "common." Under certain circumstances, it is. |
| 22 | Q. And what methodology did they use? | 22 | Q. Fair enough. Have you ever seen a |
| 23 | A. They used three different | 23 | valuation report for Coram prepared by a |
| 24 | methodologies. | 24 | Company called NERA? |
| 25 | | 25 | A. No. |
| - | , Qi .mac nei c ency: | ļ | |
| | Page 171 | ľ | Page 172 |
| 1 | MICHAEL L. TEMIN, ESQUIRE | 1 | MICHAEL L. TEMIN, ESQUIRE |
| 2 | Q. Have you ever seen a valuation | 2 | for it to have formed a conclusion. |
| . 3 | report | 3 | BY MR. PETERS: |
| 4 | by relating to Coram by an individual named | 4 | Q. Do you know whether Scott Victor |
| 5 | Jeffrey Baliban? | 5 | ever performed a valuation of Coram? |
| 6 | A. No. | 6 | A. Scott Victor and Ewan Venus (ph) |
| 7 | Q. Have you ever heard of Jeffrey | 7 | did. It says SSG Capital. Scott Victor was a |
| 8 | Baliban? | 8 | managing director or some other title at SSG |
| 9 | A. NO. | 9 | Capital Advisors, LP. |
| 10 | Q. Have you ever heard of a valuation | 1.0 | Q. So that one in the middle there |
| 11 | methodology called the single period | 11 | those two in the middle there, one, 189 |
| 12 | capitalization method? | 12 | million, one, 219 million, they would have |
| 13 | A. I'm not familiar with that. | 13 | been they were performed by Mr. Victor or |
| 14 | Q. Did you believe that the valuations | 14 | persons associated with him? |
| 15 | of Coram that are set forth on this exhibit | 15 | A. I believe so. |
| 16 | provided sufficient data for the Court or for | 16 | Q. Now, you said that last Friday, |
| 17 | you to draw conclusions about the value of | 17 | Mr. Bressler gave you materials about Mr. |
| 18 | Coram at a particular period of time? | 18 | Victor? |
| 19 | MR. BRESSLER: Object to the | .19 | MR. BRESSLER: _Object. |
| 20 | form. | 20 | BY MR. PETERS: |
| 21 | THE WITNESS: The Court felt | 21 | Q. Of Mr. Victor's report in this case? |
| 22 | that it provided sufficient data for it | 22 | |
| 23 | to do so. And since it had similar data | 23 | Q. He gave you Mr. Victor's report? |
| 24 | in '04 to the data it had in '00, it was | 24 | A. Yes. He gave me a report by Mr. |
| 25 | my opinion that there was sufficient data | 25 | Victor. |
| 1 | | 1. | |

8/6/2007

Temin, Esq., Michael L.

8/6/2007

| | Page 241 | Page 242 |
|------|------------------------------------------------|--------------------------------------------------|
| 1 | | 1 |
| 2 | EXHIBITS (Cont'd.) | 2 I have read the foregoing transcript of |
| 3 | · | 3 my video deposition given on AUGUST 6, 2007, |
| 4 | NO. DESCRIPTION PAGE | 4 and it is true, correct and complete, to the |
| 5 | Exhibit 10 Transcript from Court 203 | 5 best of my knowledge, recollection and belief, |
| 6 | 12/21/00 | 6 except for the corrections noted hereon and/or |
| 7 | Exhibit 11 Expert Report of 217 | 7 list of corrections, if any, attached on a. |
| 8 | Dworetzky | B separate sheet herewith. |
| 9 | | 9 . |
| 10 | | 10 |
| 11 | | 11 |
| 12 | | 12 |
| 13 | | 13 |
| 14 | | 14 MICHAEL L. TEMIN, ESQUIRE |
| 15 . | • | 15 |
| 16 | | 16 |
| 17 | | 17 |
| 18 | | 18 Subscribed and sworn to |
| 19 | | 19 before me this day |
| 20 | • | 20 of, 20 |
| 21 | • | 21 |
| 22 | • | 22 |
| 23 | | 23 |
| 24 | | 24 Notary Public |
| 25 | | 25 NOTALLY PODITION |
| 25 | | |
| | Page 243 | |
| 1 | | |
| 2 | CERTIFICATE | |
| 3 | | |
| 4 | I HEREBY CERTIFY that the | · |
| 5 | proceedings, evidence and objections are | |
| 6 | contained fully and accurately in the | |
| 7 | stenographic notes taken by me upon the video | |
| 8 | deposition of MICHAEL L. TEMIN, ESQUIRE, taken | |
| 9 | on AUGUST 6, 2007, and that this is a true and | |
| 10 | correct transcript of same. | |
| 11 | | |
| 12 | | · |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | MICHELLE L. GRAY, CSR . | • . |
| | and Notary Public | |
| 17 | • | |
| 18 | (The foregoing certification of this | |
| 19 | transcript does not apply to any reproduction | |
| 20 | of same by any means, unless under the direct | |
| 21 | control and/or supervision of the certifying | |
| 22 | reporter.) | |
| 2,3 | | |
| 24 | | |
| | · | |
| 25 | | |

EXHIBIT J

TYLA FEATURE

Accounting for Economic Loss

by Jeffrey L. Baliban, CPA

eyond the legal and liability questions in many commercial litigation or insurance defense cases, parties are faced with the task of determining the economic damages suffered. In ECON 101 we learn that economics is the science that deals with the production, distribution, and consumption of wealth. Economic loss referred to herein relates more particularly to the financial impact an organization or an individual suffers (or enjoys) as a result of an occurrence. Notice I avoid the word "loss." Once, while being considered for an assignment, I described some past experiences in the measuring of financial loss or damages. However, in this instance, the case included an allegation of unjust enrichment, and the question arose as to whether my previous lass calculation experience could be applicable to a gain situation. Financial impact has since served as a more descriptive and less confining term.

How should one approach the determination of financial impact? The process must begin with a description of the incident. Then, concentrating closely on the circumstances, we ask the following questions: Where do we look to determine the effects of the incident? Have operations (production, sales; etc.) been affected? To what do we compare affected operations? How do we chart historic results? How do they compare to expected results? Leaning back from our microscope focused solely on this incident we discover more questions: What else is going on within the entity at the same time that could be affecting the financial picture? How do we isolate the effects of the subject incident? Taking a few more steps back complicates the problem further: How are current market trends affecting the business, and what can be expected in the future? What effect will general economic conditions have on sales or customers? In a way, the title of this article is a paradox -- an apparent confusion of two sciences. Economic models are often used to create and illustrate projections and forecasts of the future. A sub-classification of economics known as econometrics is the science of applying mathematical and statistical methods to develop and verify economic theories. However, when faced with the questions listed above, finding the answers requires a familiarity with the practice of identifying, measuring, recording, and communicating information about an economic unit - practically the definition of accounting. Maybe financial impact analysis is an overlapping of these two sciences. And, as any good economist will tell you, in order to perform a forecast or analysis, one must have as good an understanding of the underlying data as possible. Since that underlying data is basically accounting data, we begin to see that accounting plays a fundamental role in financial impact analysis.

To discuss all the aspects, concerns, and technical rigors of financial impact study could be a life-time undertaking; the index alone would be longer than this article. My intention, therefore, is to provide a broad overview to a very technical topic. What you will find herein is a way to approach the precipice and test a few bridges across it; to lean over the edge and peer down into its depths.

<u>Measurement</u>

The objective of this analysis is to measure the effect of the occurrence on business; or more particularly, its financial impact. While such an analysis can be approached in a variety of ways, possibly the most useful course to follow is to attack separately, the two alteregos of Volume and Valuation. Volume refers to quantities and quantitative measurements. It answers questions such as "How much production was lost?" and "By how much will operations fall short of estimates and budgets?" Business interruption insurance policies often require the measurement of lost production as a prerequisite to any financial loss calculation. Indeed, the indemnity periods addressed by those contracts often are restricted to the amount of time production, as opposed to sales, may be affected. But volume measurements do not ignore sales. Once a calculation "rope" can be thrown around the periphery of financial effect, the reining in of those numbers to determine the true financial impact begins. This refers to the all-important, but too often overlooked, procedure of translating the production loss to loss of sales. For a variety of reasons, the two are very often not the same. Valuation deals with the paring down of sales impact to financial impact. It requires an analysis of revenues, costs of revenue, continuing and non-continuing operating expenses, and normal profit levels. It explores the various relationships that normally exist amongst these accounting data, and ultimately results in the financial impact on the pocketbook of the claimant.

Applicability

The accounting, audit, and investigation process to be discussed here is not one that is in the mainstream of the accounting profession. The services an accountant can offer to litigators can be valuable, but that value is increased manyfold by employing an accountant with experience in investigating and evaluating claims for damages. Such an individual will be knowledgeable in both insurance and legal proceedings, as well as auditing. Her involvement can span the case development process: from initial discussions its relative merits as a consultant, through the discovery process of document production requests, admissions, interrogatories, and depositions; from the evaluation of claim submissions, through the providing of alternative measurements of loss; ultimately to trial testimony as an expert witness, if necessary,

From the property claims person's point of view, calculations of loss under business interruption policies often requires accounting expertise. From the point of view of the liability or casualty claims person, the need for investigative accounting experience most often applies to situations where physical damage is caused by an insured to another's income producing property. This property can be that which produces a salable product or it could be the salable product itself. In personal injury cases, an accountant can be most helpful where the injured party is the owner of a business, or when damages to an injured party directly affect operation of a business. Beyond insurance matters, specific accounting expertise is necessary in dam-

age calculations flowing from a variety of causes. An abbreviated list could include antitrust, arson, business valuations, construction claims, contract disputes, environmental (toxic tort) damages, franchise termination, fraud, personal injury, products liability, professional malpractice, subrogation, trade secrets, and yes, unjust enrichment. This listing considers many diverse situations. However, the analytical approach to calculating financial impact can cover a wide variety of applications.

Indemnification

The theory underlying financial impact analysis, indeed the very basis of mind-set and approach, is that of indemnity. Webster describes indemnification with phrases such as "keep free from loss" and "recompense". In loss measurement, it describes the idea that the damaged party should be made whole; that a claimant should be entitled to no less, but no more, than what normal, incident-free operations would have generated. Normal operations may historically result in

all operating costs and expenses being recovered, along with the generation of a monthly net profit. Loss calculations should attempt to return the damaged party to no greater or worse a financial position. By the same token, normal operations may not regularly cover all fixed and continuing operating expenses, resulting in a net operating loss of, say, \$20,000 on a monthly basis. If actual operations during a period affected by a loss incident result in a net operating loss of \$60,000 for that month, the financial impact on that company's income statement would be \$40,000; enough to return the company to its numal position. This simple example is intended only to illustrate the point.

The analytical approach to determining volume measurement of financial loss can be simply presented as in Table 1, below:

Forecast of operations during the affected period, assuming no incident or loss had occurred

- Results of actual operations during the abovereflected period
- Difference (but is it a difference due to the incident?)

Table 1 - Analytical Approach

The difference resulting from this comparison is one to which valuation analyses would have to be applied. Of the two variables reflected above, the forecast is by far the more elusive, and the remainder of this article is devoted to its examination. A forecast is a projection of the future based on the present and the past. It is an educated guess about the future, based on current conditions. The two most prevalent forecasting formats are the track-roard and the yardstick methods.

A company's track-record is its direction or trend based on its actual historic results. Monthly sales can be plotted on a graph, using the X,Y coordinates (Xs' for months and 'Ys' for sales). If the data is fairly uniform, the plot will represent a line or continuous curve. Basic regression techniques can reduce the line to a mathematical formula, such that for any given X coordinate (month), the formula provides the associated Y coordinate (sales). This is a very simple description of autoregressive time-series analysis.

The yardstick method refers to a comparison on two or more sets of data. A forecaster must sift through volumes of data and is experienced at noting patterns and functional relationships. Once a legitimate pattern or relationship can be discerned, a forecast can be made utilizing one or more independent variables. This refers to multiple regression analysis.

I said before that a forecast is an educated guess about the future. Usually, the more complete the education process, the more accurate the forecast. This point cannot be over-emphasized. The deeper the forecast's roots in actual historic and current statistics and information, the more strongly will its projecting branches withstand the winds of challenge and dispute, and the scrutiny of cross-

A microanalysis should be performed on the company itself; its history, trends, and track-record. This deals with in-house statistics, production records, accounting data, operations management data, sales information, orders information, and business records of many kinds. This should be complemented with a macroanalysis, concentrating on independently compiled information regarding applicable current market and industry trends, product demand, and economic conditions.

Microanalysis

The initial education comes from within the organization being reviewed. This will provide the forecaster with the rationale for that company's appraisal of where it has come from; and where it's going. In-house statistics can be gleaned from a variety of sources:

Accounting records: Financial statements are usually presented on a regular basis for any business organization. For many businesses, an annual audit by a CPA is required. Often, management will require a more frequent presentation, such as monthly statements. The balance sheet reflects the company's financial position as of the report date, with respect to the entity's assets, liabilities, and equity. A cash flow statement presents sources and uses of cash over the preceding period from operating, investing, and financing activities. The income statement (profit & loss statement) presents the results of operations for the period ending on the report date, and reflects revenue generated during the period, matched to expenses incurred to generate that revenue. Books of original entry, such as cash receipts and disbursements journals, sales journals, and general ledgers contain the details supporting the financial statements. They provide the daily operating framework within which accounting activities are recorded.

Production records: These document the process through which revenue is earned, and can reflect costs incurred, hours worked, or units produced. They can be presented on a variety of unit bases (pieces, pounds, tons, gallons, barrels, man-hours, etc.). Production records can be periodic (shift, day, week, or month) or by department. Plant manager reports usually contain a wealth of statistical data about plant operations, as well as descriptions of various problems or difficulties encountered in the process. Maintenance records may report production volume in the monitoring of plant equipment. Depending on the business, production may be regulated or monitored by organizations such as the Food and Drug Administration, and these agencies often have their own particular reporting requirements.

In reviewing production records, it is important to understand the flow of material through the process being analyzed. Production can be a one-step operation or a complex process. A silicon chip manufacturing line can consist of more than 100 separate steps of slicing, photo-engraving, etching, probing, testing, and others, each with a different rate of production and spoilage factor. An interruption in operations can affect the entire processing line or may be confined to one or a few of these steps. Therefore, operations flow analysis is essential.

Sales information: These statistics can be tracked in an organization in many ways: by product, geographic region, dollar amount, sales person, and others. Monthly operating statements reflect a regular measure of sales trends. They can be supported by detailed listings of items such as sales invoices, contracts, or agreements. Many organizations also produce

other tabulated listings of sales activities for their own purposes, such as orders listings, bid vs. award statistics, and shipment logs.

Macroanalysis

For a variety of reasons, it may be necessary to go outside the subject entity for a completion of the education process, and look at the subject entity within the context of current market trends and general economic conditions. Trade journals and organizations can provide the latest information on market operating results, new directions, sales strategies, production technology, and obsolescence trends. A wealth of data is also available from many state and federal government agencies. Some examples of data sources from the federal government include The U.S. Department of Labor -- Bureau of Labor Statistics, The U.S. Department of Commerce - Bureau of Economic Analysis, The Economic Report of the President, The Federal Reserve Bulletin, and many others. These can provide a general background to economic conditions and present various leading economic indicators which are helpful in the modeling process. State and local governments can provide similar statistics; some of which can often be much more focused in nature. For example, many states maintain economic analysis centers within their respective comptroller's office or bureau of revenue and taxation. These agencies collect data regarding specific industries in the local area.

To illustrate some of the points outlined above, I present two simplified cases utilizing different forecasting techniques. The first is a products liability case in which a manufacturer of perishable food items (ABC Foods) sought damages against its vendor of packaging materials. The suspect packaging materials were acquired late in 1985 and are claimed to have shortened the shelf-life of the product. Their effect on sales was claimed to have begun in the second half of 1986. Table 2 below shows the claim for lost sales:

| | Claimed sales | As a percent of the prior year | Actual sales | Lost sales |
|-------------------------------------|-------------------------|--------------------------------------|-------------------------|----------------------|
| Historic period: 1984 1985 | \$ 480,000 1,010,000 | 210% | \$ 480,000 1,010,000 | \$ O O |
| <u>Loss period:</u> 1986 1987 | 2,125,000 4,470,000 | 210% 210% | 1,185,000 1,435,000 | 940,000 3,035,000 |
| Total | | | | \$ 3,975,000 |

– Claim for Lost Sales Table 2-

Looking at these figures, we can make the following observations:

- Sales for 1985 were 210% of 1984 levels. This is claimed as the "historic track-record" by which future sales can be fore-
- The suspect packaging was purchased in late 1985. The effect on sales was not noticed until the second half of 1986;
- Sales for 1986 and 1987 were projected at 210% of the prior year. These projections are compared to actual sales for those years to yield the claimed loss of \$3,975,000.

At first glance, this analysis seems reasonable. It is basically arithmetic in nature and seems to be indisputable. It uses actual historic facts to support its track-record — the 1984-to-1985 sales comparison of 210%. It projects forward for 1986 and 1987 in a manner consistent with that proven track-record. Assuming the numbers reflected are supported by the books and records, there does not seem to be much flexibility in interpretation of this presentation.

However, it has been said that one picture is worth a thousand words. In this case it may be worth millions of dollars. In Figure 1 below is a graphical presentation of the claim in Table 1 above.

ABC Foods

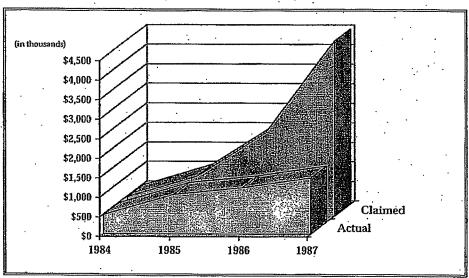


Figure 1 - Claimed vs Actual Annual Sales

Now what observations can be made? Similar to the Table I presentation, there is a significant difference between forecast ("Claimed") and actual sales for 1986 and 1987. However, Figure 1 clearly shows the rate of incline in the projection increases each year. This is a function of using a percentage rate of growth. Sales for 1985 were 210% of 1984. Or should it be said sales increased by \$530,000 from 1984 to 1985. Using this dollar figure as a consistent rate of growth would provide a very different forecast for 1986 and 1987.

An important part of the investigating accountant's efforts should be directed not only towards "how much?" but "why?." Why were 1985 sales 210% of 1984? Is this something that can be expected to continue? It is not enough to establish what the historic track-record was. It has to be shown to be representative and relevant before it can be accepted as a basis for a forecast.

In Figure 2 below, we present the same company's sales, except this time they are reflected on a quarterly basis. We also increase the period to include 1983 activity.

ABC Foods

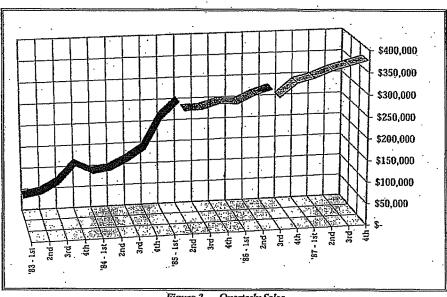


Figure 2 - Quarterly Sales

In Figure 2, 1 divided the five years into three sections. The first section extends to the second quarter of 1985. Note the rate at which sales were increasing prior to this point. The investigation was directed to determining what internal or external forces drove sales up at such a steep rate. Through the review process, it was determined that the company introduced new products and hired additional sales representatives at the beginning of 1984. These management decisions had the effect of increasing sales throughout that year and into 1985. If it could be reasoned that those forces would not continue during 1986 and 1987, then this historic period may not be a representative base on which to forecast. After the

second quarter of 1985, sales trends level off. This is at least a full year prior to any effects the suspect packaging could have caused. What caused this change in direction? Had management's operating methods and decisions reached their potential?

The second section of the graph includes quarter 2, 1985 and goes through quarter 2, 1986. As with the first section, we understand from the facts of the case that this period was also unaffected by the incident. Table 3 below shows that sales growth for this period was greatly reduced from 210%:

| | Sales · | Percent of prior period |
|-------------------|------------|-------------------------|
| • | | |
| 2nd Quarter, 1985 | \$ 263,000 | |
| 2nd Quarter, 1986 | \$ 300,000 | 114.07% |

Table 3 --- Actual Sales Growth

This represents activity from April, 1985 through June, 1986, a fifteen-month period before the business was affected by the occurrence, and should certainly be given due consideration in projections.

Case 2

Al's Hardware, Inc. is a company based in Fort Worth, Texas. It has a concentration in the sale, installation, and repair of heating and air conditioning equipment. On January 10, 1987, the explosion of a faulty compressed air tank caused physical damage as well as an interruption of business. Figure 3 below presents quarterly sales from 1985 through 1987. While it appears that sales for quarter 1, 1987

are affected, the track-record of sales Is somewhat erratic, making a trend analysis difficult.

Al's Hardware Inc.

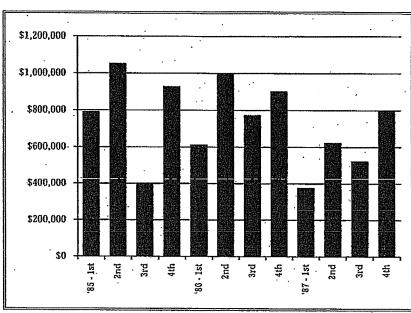


Figure 3 — Quarterly Sales

In this case, it would be helpful to find an index on which to base a forecast of sales: a set of data not affected by the occurrence at Al's but indicative of sales directions in this industry during the affected period: a yardstick by which Al's results can be measured.

Al's Hardware files a Texas Sales and Use Tax Return, as do most other businesses in the state. An item of information requested on the return is an SIC code under which the return is being filed. SIC (Standard Industry Classification) codes are available through various state and federal government offices and publications. Al's Hardware filed under SIC 507. Trade and Services - Hardware/Plumbing/Heating Equipment. The Texas State Comptroller's Office in Austin can provide an information report entitled Reported

Gross Sales and Taxable Sales by SIC code, accumulating reported sales for all entities under any requested classification. This can be provided for sales on a state-wide basis or for a geographic location as narrowly focused as zip code.

In Figure 4 below, we present Al's Hardware quarterly sales compared to SIC code 507 - Tarrant County sales for the same period. Historically, Al's Hardware results compare favorably to the industry average for Tarrant County. This relationship can be utilized to illustrate the gap in sales for first quarter, 1987. This is but one source of available information that provides a useful yardstick on which a forecast can be based.

Al's Sales vs SIC 507-Hardware/Plumbing/Heating Equipment

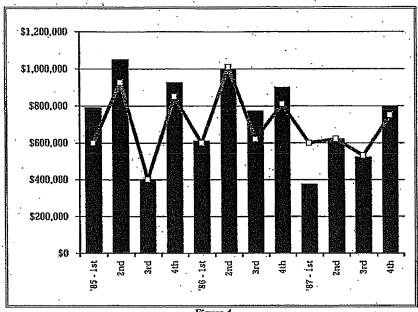


Figure 4

To summarize, my intention was to provide the reader with an overview of an approach to one aspect of financial impact analysis. Forecasting plays a basic role in the development and review of financial damages. Any two forecasters can achieve very different results even though they use the same base of data. Since that base of data

is accounting information, a thorough understanding of the underlying accounting principles, theories, and assumptions that produced that data is of the utmost importance. It is an essential ingredient of a forecast capable of withstanding intense scrutiny.

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